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Water and Sanitation in Mumbai's Slums: Education through Inquiry Based Learning in Social Work

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Abstract

Water and sanitation are the most important services necessary for life and dignity of citizens. But slum dwellers are excluded from these services, resulting in environmental degradation, marginalization and poor health. Through inquiry based learning, the first author has attempted to give his students an first hand and innovative learning experience by helping them to explore water and sanitation issues in the Ambujwadi slum of Mumbai (India) on their own. The paper highlights the pedagogical approach and by the way of illustrations helps the reader to understand its usefulness in teaching students of social work.

Keywords

Inquiry Based Learning, Slums, Sanitation, Water, Abuse

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Water and Sanitation in Mumbai's Slums: Education through Inquiry Based Learning in Social Work

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Water and sanitation are the most important services necessary for life and dignity of citizens. But slum dwellers are excluded from these services, resulting in environmental degradation, marginalization and poor health. Through inquiry based learning, the first author has attempted to give his students an first hand and innovative learning experience by helping them to explore water and sanitation issues in the Ambujwadi slum of Mumbai (India) on their own. The paper highlights the pedagogical approach and by the way of illustrations helps the reader to understand its usefulness in teaching students of social work. Keywords: Inquiry Based Learning, Slums, Sanitation, Water, Abuse

Setting the Context

Social work is a dynamic field of study which is mainly concerned with the study of individuals, groups, communities and institutions of welfare. It is also a practice profession. In any standard social work program across the globe, there are four major components, namely basic social science foundation courses, core social work methods courses, a research project and field work. The signature component which differentiates social work from other social science academic programs is the field work or field instruction.

Field instruction is an integral component in social work education. Though field instruction is called in different ways such as field work, field practicum, field placement, internship, etc, the goal and essence remains the same, which is to prepare social work professionals through instruction as well as practical exposure.

In field instruction, three approaches are observed, namely apprenticeship approach, academic approach and the articulated approach. The first approach emphasizes on exposing the students to the field as an apprentice. Very less or no theoretical input is provided to the students. In the academic approach, deductive and knowledge- directed practice is preferred. In the articulated approach, both experiential and academic approaches are mixed (Royse, Dhoopa, & Rompf, 2012).

Field instruction exposes the students to the field reality and helps them to apply the principles and methods of social work taught in the class. But in most of the universities and colleges, the field work education is top-down. The students seldom have chance to build their own knowledge and perspective. Inquiry based learning on the other hand offers a bottom-up approach.

Inquiry Based Learning (IBL) which has emerged as an innovative instructional model is closer to the academic approach in field instruction (Royse et al., 2012). IBL is a pedagogical method within the constructivist learning tradition that engages students to investigate real world problems and make action plan if necessary (Spronken-Smith, Angelo, Mathews, O'Steen, & Robertson, 2007).

IBL is opposed to the rote memorization model. It focuses on generating questions and finding answers through experiences. Prof. Miriam Freeman, an emeritus professor in the College of Social Work, University of South Carolina has started exploring the use of inquiry based learning in social work education (Besley et al., 2007).

In this method, the faculty instructor facilitates the learning process by helping the students generate questions, investigate, construct knowledge and reflect (Besley et al., 2007). Thus IBL helps in holistic understanding of concepts and issues. Inspired by the initiative of Prof. Miriam Freeman, the 1st author (social work educator) has attempted to use the IBL in field instruction with a small cohort of three BSW (Bachelors in Social Work) students of the College of Social Work, Nirmala Niketan, Mumbai.

The students in the cohort were from different geographical, cultural and social backgrounds. Their grasping abilities were also different. Thus using IBL to teach them seemed a tough job. However, by using the Justice et al. (2002) framework of inquiry in IBL, the 1st author developed a step by step process of facilitating learning among students. This helped in implementing the IBL in field instruction successfully.

The Justice et al. (2002) framework of inquiry is a 5 stage process. It starts with engaging with a topic and developing basic literature review on it. At the second stage, questions are developed. In the third stage, data is gathered followed by analysis. In the fourth stage, the new knowledge is synthesized and it is communicated. Finally the output is evaluated. In all the stages, there is participation of the students as well as the field instructor.

Adopting this model in field work required making full use of the field work seminars as the space for teaching and facilitation. Field work seminar is the forum in which academic input is given to a cohort of field work students. In the seminar, students are encouraged to share their reflection and find linkages with theory and practice.

In the College of Social Work, Nirmala Niketan, final year students are allotted to different field placements according to their area of interest. A cohort of three BSW students was interested in understanding issue of slum dwellers. Hence the field work committee placed them in a NGO working in the Ambujwadi slum. The committee allotted the 1st author as field instructor to guide them in the field work.

After an informal chat with the students, the field instructor understood their area of interest, skills and abilities. He explained to the students about his plan to use IBL for the field work course. The students agreed for participating in the project.

The College of Social Work, Nirmala Niketan supports such field work innovation at the institutional level. The college is a nationally renowned leader in field work and social work education. Many of the faculty members of the college are also working on innovative field action projects. Hence getting approval for such innovation was not that difficult. Once the learning plan was agreed, the safety policy was reviewed by the students. It helped the students to understand the safety protocol to follow during instances of stress, harassment and human rights violations.

During the 1st field work seminar, the students came with the proposal to study and understand the *water and sanitation* issues in slums of Mumbai. The students were not used to read any literature for the field work course. Hence they were initially bored. After motivation from the field instructor, the students took it as a challenging assignment and began to read the relevant literature. During the 2nd field work seminar, they came up with a brief review of literature, which is presented below.

Literature

In India, the slums are administered by the slum improvement and clearance boards. The Slum Area Improvement and Clearance Act is the regulatory legal document. Section-3 of the act defines slum as a residential areas where dwellings are unfit for human habitation by reasons of dilapidation, overcrowding, faulty arrangements and design of such buildings, narrowness or faulty arrangement of street, lack of ventilation, light, or sanitation facilities or any combination of these factors which are detrimental to the safety and health.

There are three types of slums in India, namely notified slums, recognized slums and identified slums. Notified slums are areas in the city notified as slum by the government under the slum act. Recognized slums are areas which are recognized as slum but may have not been formally notified as slum under any act. Identified slums is a compact area of at least 300 population or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities.

According to the 2011 census, 41.3 % of the total urban households in Mumbai live in the slums. The report of Municipal Corporation of Greater Mumbai shows that 47% of slums are located in the private lands, 42 % on public land, 10% on other land and 1% on railway land (MCGM, n.d). Most of the slum dwellers live in chawls, zopadpattis and the pavements. The major problem faced by the slum dwellers is water and sanitation.

Water supply to Mumbai is technically successful, but due to misuse of water through un-metered and unaccounted water supply, effective functioning of the system is hindered (Surekha, n.d). The data given by deputy commissioner of Municipal Corporation of Greater Mumbai gives the glaring fact with respect to water.

Table 1. Water Consumption in Mumbai

Mumbai population in Millions		Per-capita consumption (LPCD)	Total consumption (MLD)
Slum	6.5	100	686.00
Non-slum	5.93	200	1297.00
Total	12.43		1983.40

Source: R B Bambale, MCGM (http://www.icrier.org/pdf/Maharashtra_05nov12.pdf)

Among the 12.43 million people in Mumbai, 6.5 million are slum dwellers and their per-capita consumption of water is just 100 LPCD and the total consumption is 686 MLD. The per-capita consumption of the rest (5.93 million non-slum people) is 200 LPCD and the total consumption is twice (i.e., 1297 MLD). Thus it is clear that most of the water is used by the comparatively richer sections of the society. Moreover, the government decision to give water connection only to those structures available before 1.1.1995 has made the situation miserable for slum dwellers.

Sanitation is another major challenge in cities like Mumbai. According to the planning commission, 43% of households in urban areas either had no latrines or no connection to a septic tank or sewerage (Government of India, 2002). In their research study, Mundu and Bhagat (2008) found out that even notified slums in Mumbai have only one tap per 1000 persons.

Surekha (n.d) opines that the sanitation problem in Mumbai could have been solved a decade back had the Mumbai Sewerage Disposal Project undertaken under the World Bank (WB) taken off during the mid 1990s. World Bank had put a condition of participation of local slum people in the implementation of the program. But due to some reason or other the project did not take off. By the end of the first term, only 17 toilet blocks were. Surekha points out the only 356 public toilet blocks were totally constructed till the mid 2000s.

Various scholars have observed the pathetic condition of people living in slums of Mumbai. A survey conducted by Karn and Harada (2002) in four slums of Mumbai with a total sample size of 1,070 household revealed extremely low water consumption pattern, lack of sewerage and safe excreta disposal facilities manifested by high occurrence of water-borne diseases. The authors also estimated that atleast 30% of all morbidity can be accounted for by water-related infections. Mundu and Bhagat (2008) found that most of the households in the

slums share community toilets and bathrooms. Hence they recommended the improvement of slums through community participation.

Sarkar and Moulik (2006) make an interesting observation:

Although the state's Slum Act empowers public agencies to provide services to all slums irrespective of their ownership, these agencies face a number of technical, capacity, and resource constraints in carrying out their mandate. (p. 10)

The authors claim that the service agencies of the government are hesitant in making capital investments unless they receive a NOC from the land owner, fearing demolition. Hence most of the identified slums are not provided proper services.

The literature review helped the students to understand the issue (i.e., water and sanitation in slums). However, they were only fairly able to develop the theoretical understanding on the subject, namely the political economy of water and sanitation in the slums. Nevertheless, the students were able to understand the basic issues through the literature review.

Questions

After the brief review of literature was presented, the field instructor helped the students to ask questions based on their readings. After much stimulation, the students arrived at the following questions:

- What are the main sources of water to the slums?
- How much distance do the slum people travel to get water?
- Are there toilet facilities in the slums?
- Do women and children face abuse while going for open defecation?

Choosing the Method

During the 3rd field work seminar, the students deliberated on the method which can be used in the study. They were not exposed to different methodologies at the under-graduation level. Hence the field instructor oriented them on qualitative and quantitative research paradigms. Finally, based on the research questions, qualitative methodology was found to be appropriate. The field instructor suggested the students to use interview as the method for data collection.

Interview is used to access people's experiences, perceptions, attitudes, and feelings. Charles Booth is credited for developing the method in 1886. The Chicago school gave a new lease to the method in the 1920's. Based on the degree of structuring, interviews can be divided into three categories: structured interviews, semi-structured interviews, and unstructured interviews (Fontana & Frey, 2005). Semi structured interview was suggested for the study by the field instructor.

Due to the rapport and previous work experience in the community, Ambujwadi was selected as the site of the study.

Data collection was done in four phases. In the first phase, a list of research participants (key informants) was drawn. In the second phase, an interview guide was developed. In the third phase, data was collected from the research participants who consented for the study. In the fourth phase data was analyzed thematically. The findings were presented in the 4th field work seminar. The gist of the same is presented below.

Findings

Basic Information

The 65 acre of land in which the slum people live in Ambujwadi belongs to the Collector (District Magistrate). It has about 8,000 shanties. The total households in the community are 50,000.

The community is an identified slum settlement. This community has been demolished for twenty two times in the past. Ambujwadi slum has mixed culture and people practice different religions in the slum. Many of them are migrants from Uttar Pradesh, Karnataka, and Tamil Nadu. Majority of them are Muslims. People of this community are mostly engaged in the informal sector.

Water Problems

The Ambujwadi slum does not have corporation water (pipe line) connection. The main water source for the community is located in Malawani Gate No 8 and MHB colony, which is 3km away from the community. The other option is mobile water (that which comes in automobile vehicles, which is sold to the people who are not able to collect water). Some people who have their own bicycle fetch water from MHB colony, Malwani. The people who live in MHADA building nearby distribute water to the people whom they know.

The people who live in Ambujawadi take 15 to 20 minutes to go to the main water source. The people who live in Kargil- a sub slum area, takes 30 minutes to go to the main water source. The main water source is at the entrance of Ambujawadi. The other source is at the MHB colony which takes one hour (to fetch and come back).

The water timings are from 4 am to 8 am, and in the evening it may come again. During the evening time, only the men go to collect the water leaving all their other work behind. Elderly people, differently able persons and widows normally depend on mobile water. The bore well water is used for sanitation and washing purpose. It is not used for drinking because of the taste and odd color. On an average, a household spends Rs. 600 to 1500 per month on water.

Most of the research participants knew about the safety measures for clean and portable drinking water. But they hardly boil the water because of the cost associated with boiling. One of the respondents, Mr. Rajan (name changed) said "...when we don't even have proper house and sanitation facilities, how can we think about wasting money on boiling water?"

Most of the slum dwellers in the locality depend on fire wood and kerosene. Two or three pieces of fire wood costs them 10 rupees and kerosene from private sources costs them 60 rupees per liter. Figure 1 shows the local women carrying wood for cooking. It also shows the community pump where the locals fetch water.

The people use plastic cans to store drinking and cooking water. According to Navnirman Samaj Vikas Kendra, a community based organization working in the community, people store water in plastic cans for more than two days and due to this, diseases such as jaundice spread and people get infected. It is also leads to seasonal diseases and infections.

Sanitation Problems

There are no private toilet facilities and people have to depend on public toilets or go for open defecation only. For the 50000 HHs in Ambujawadi, only 9 toilets are available. The

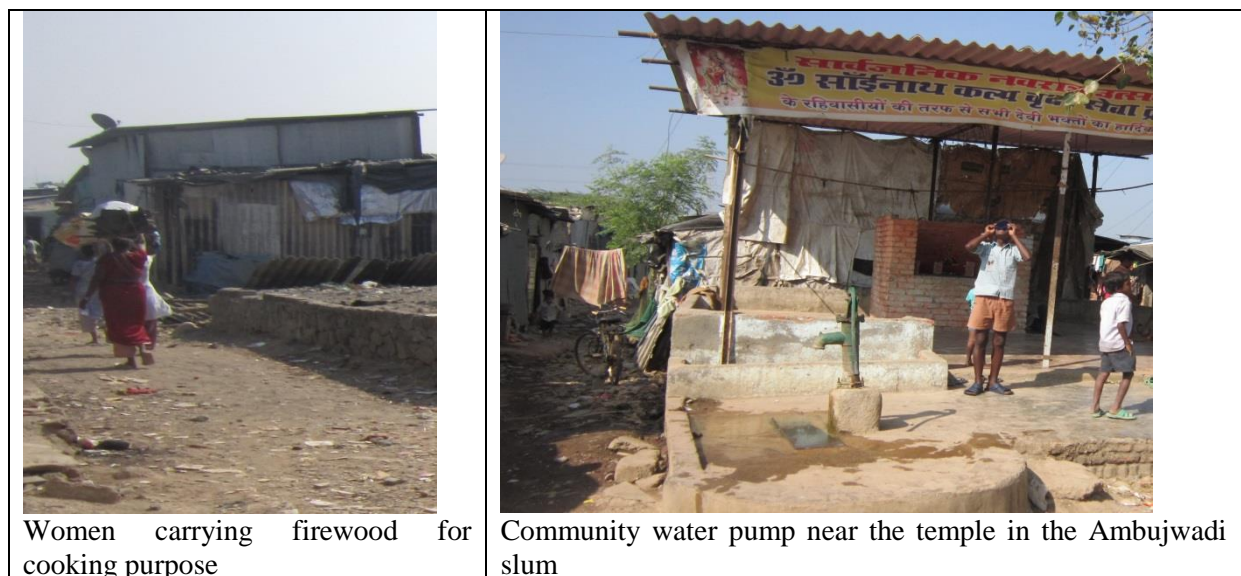
population- toilet proportion is not appropriate for proper use. The toilets are in bad condition and there is no light or any ventilation. In some toilets there are no doors. Water facility is also not available inside the toilets. Moreover, the surrounding area of toilets is dirty due to open sewage. The figure 2 shows the condition prevailing in the area.

Above all these troubles, the real cause of worry is the payment for using this service. For each time an individual uses the toilet, he/she has to pay 2 rupees to the person who cleans the toilet. It becomes a problem for the household having small children because it is costly to use for the entire family. Hence the people use open defecation practice. In the early morning and the late evenings, women in the community face harassment while using open defecation. They need to take their husbands, parents or friends with them while open defecation.

Two of the recent cases of abuse while going for open defecation are given below: Nine year old girl Neha (name changed) lived along with her mother in Ambujawadi. Her mother is in a daily wage job and goes to work outside the Malwani/Malad area. When she is away for the work she used to leave her children with a neighbor. On that particular day when the girl went to the toilet in the late evening she was accompanied by her neighbour. Later it was found that she was raped, killed and buried in the jungle nearby.

In another instance, Sunita (name changed) went for nature's call in the morning. Two drug addicts followed her and started to take photos of her. She had no choice but to keep quite. The boys later began to misbehave with her. She screaming loudly and people rescued Sunita from them. Now, Sunita is suffering from post-traumatic stress disorder and is very afraid to go alone. There are many such issues happening each day and women silently bear the abuse as they find no way out.

Figure 1. Firewood and Community Water Pump



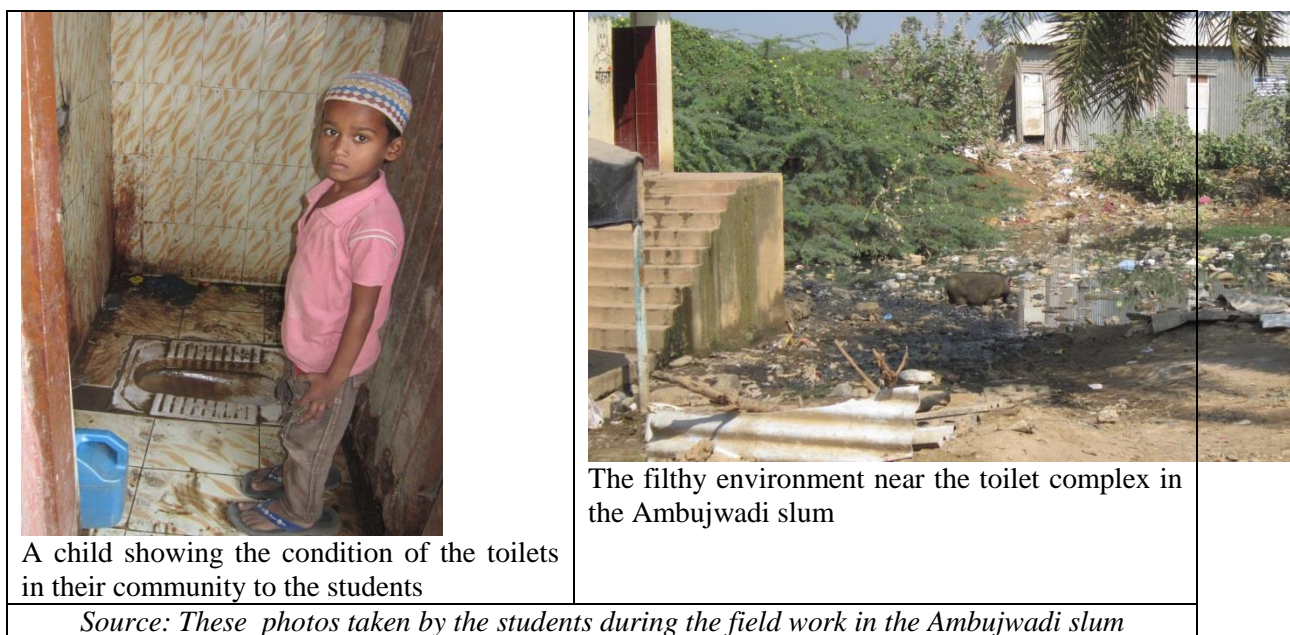
Discussion

During the 5th field work seminar, the students began to synthesize their findings. With a little bit of support from the field instructor, they were able to discuss about their new discovery in relation to the questions investigated.

From the discovery, they were able to understand that the main source of water to the identified slum is far away and the people have to walk for 15 to 30 minutes to fetch water. They also understood the lack of proper sanitation conditions and the plight of women and

children who face abuse every day while going for open defecation. The students were able to corroborate their findings with other studies as well. Some of their corroborated literature the students presented is given below. Lodhia (2009) in his study of slums in Gujrat found out that water supply is highly erratic and unreliable. He also highlighted that the water sources are far away from the slums. Biplob, Sarker, and Sarker (2011) also found out that most of the water sources are far away from the slums.

Figure 2. Environmental Conditions in the Slum



In his study in Chennai, Chandramouli (2003) observed that only 26% of the slum population had access to drinking water within their premises. He also revealed that 19% of the slum population had to go more than 500m to access to drinking water, while of the proportion of non-slum population who had to go that far away was only 5%. He also recorded that the access as well as source of drinking water has a definite impact on the incidence and spread of diseases.

The plight of women and children who face abuse while going for open defecation is also dealt by other scholars. A study conducted by Lennon (2011) in Delhi revealed that women and girls living in the refugee camps and the slums face sexual harassment while they go for open defecation. A recent study by Gupta (2014) in slums of Bhopal and Indore city also highlights that the women and girls face abuse and physical harassment in their daily lives when they go for open defecation.

These corroborative findings helped the students understand the critical condition at hand. They also realized that in order to address the twin issue of water and sanitation, it is important for the local government agencies and the NGOs to find strategic and financially viable solutions to provide water and sanitation facility within the slum locality itself.

Conclusion

IBL has facilitated in active learning, as the pedagogic tool engaged them in the field as well as helped them to engross the literature on the subject. But as far as the quality is concerned, there needs to be improvement in certain areas such as the following:

- Students have to learn to find the right literature available in their area of interest
- Before developing questions, students can go to the field for a pilot visit
- Students have to use effective probing techniques to gain more information from the participants
- Most importantly, they have to critically engage with the literature rather than just presenting the findings

However, the Inquiry Based Learning (IBL) has helped the students to understand the issue at hand and analyze their own data using basic thematic analysis technique. This method has also helped them to make sound professional judgments based on empirical evidence. It also brought fun and creativity in the teaching-learning process.

Lalit, the 2nd author expressed that the experiment has made him to believe that field work is vital in social work. He says, “I would look for such learning opportunities in the future, as this expanded my knowledge, skills and attitudes to work with people”.

Josy, the 3rd author testified that the IBL has liberated her from the top-down field work approach exercised before. She urges the social work educators across the globe to allow their students to build their own perspective from the field. She emphasizes, “I recommend the social work educators to use this method in field instruction as this liberates the students and helps them build their own perspective.”

Impana, the 4th author said that the method employed by the field instructor is democratic and participative. It has helped her to know the realities of the field. She also said, “I am convinced that theoretical knowledge is more important for social work students. Hence I recommend this academic approach to field work as it will enhance the capacity of the social workers.” Thus IBL as a pedagogy has enabled the students to experience the processes of knowledge creation and has helped them to develop research skills and become life-long learners. However, there is lack of awareness among social work educators about the use of IBL and other participatory inquiry approaches in field work. It is therefore necessary to inform, train and motivate educators to make the learning experience memorable for students.

With a workable model at hand, the authors challenge the global social work educators to further experiment with IBL at their respective social work schools. Our small effort can bring the IBL as a mainstream approach in field instruction in the future!

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